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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/716,543	11/20/2003	Tomas I. Babic	08215-539001	5678

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EXAMINER

BROUSSARD, COREY M

ART UNIT PAPER NUMBER

2835

DATE MAILED: 11/29/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/716,543

Applicant(s)

BABIC ET AL.

Examiner

Corey M. Broussard

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 November 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-39 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-39 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) ✓
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 6/15/04
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-4, 6-11, 14, 16, 17, 22-25, 27-29, 31-33 and 37-39 are rejected under 35 U.S.C. 102(b) as being anticipated by Healey, Jr. (PN 3,979,709). With respect to claim 1, Healey teaches a fuse comprising: an electrical assembly comprising two electrical contacts (7) accessible from an exterior of a fuse and a fuse element (1) in contact with the two electrical contacts; and a fuse tube assembly comprising a support structure (6a and 6b) surrounding at least a portion of the electrical assembly (see Fig. 1) and a reinforcing structure (6c) formed over the support structure and in contact with at least a portion of the electrical assembly, wherein the reinforcing structure comprises a fiber matrix pre-impregnated with a resin (Fig. 1 labels 6c as a resin impregnated glass cloth).

3. With respect to claims 2-4, Healey teaches a current limiting fuse wherein the fuse element (1) and the fuse tube assembly (6) extends between the contacts (see Fig.

1)

4. With respect to claims 6 and 7, Healey teaches that the fiber matrix comprises a pre-woven fabric (6c, column 6 lines 25-26) of fibers oriented in a predetermined orientation (see Fig. 7).
5. With respect to claims 8, 9 and 14, Healey teaches a pre-formed sleeve structure of composite material (see D2 of Fig. 15).
6. With respect to claim 10, Healey teaches a slit extending from a first end of the structure to a second end (see Fig. 7, 9-12).
7. With respect to claim 11, Healey teaches that the thickness of the support structure (6a and 6b) is greater than the thickness of the reinforcing structure (6c, see Fig. 10).
8. With respect to claims 16 and 17, Healey teaches the matrix as applied in Fig. 15 is applied circumferentially with a predetermined angle and orientation.
9. With respect to claim 22-24, Healey teaches wherein the reinforcing structure (6c) is configured to reinforce a selected portion of an area of the fuse along a lengthwise axis of the fuse that comprises less than all of the area (see Fig. 1, 6c does not extend past the end cap 7), and where the selected portion excludes a portion of the outside surface of the electrical assembly (see Fig. 1, 6c is covered by 7 on the end).
10. With respect to claim 25, the method of reinforcing a fuse is inherent in the structure of Healey. Healey teaches a method of reinforcing a fuse comprising: electrical assembly comprising two electrical contacts (7) accessible from an exterior of a fuse and a fuse element (1) in contact with the two electrical contacts (see Fig. 1); surrounding at least a portion of the electrical assembly by a support structure (6a and

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6b); and applying a reinforcing structure (6c) over the support structure and in contact with at least a portion of the electrical assembly (see Fig. 1), wherein the reinforcing structure comprises a fiber matrix, the fiber matrix comprising fibers pre-impregnated with a resin (Fig. 1 labels 6c as a resin impregnated glass cloth).

11. With respect to claim 27-29, Healey teaches that the matrix is applied in a rolling operation, a wrapping operation, or is circumferentially applied (see Fig. 15 and columns 11-13).

12. With respect to claims 31-33, Healey teaches curing the fuse via heating (column 12 lines 18-22).

13. With respect to claim 37, Healey teaches filling the fuse with an electrical arc-quenching medium (5, column 5 lines 66-8).

14. With respect to claim 38 and 39, Healey teaches a current limiting fuse comprising: an electrical assembly comprising two electrical contacts (7) accessible from an exterior of the fuse and a fuse element (1) in contact with the two electrical contacts (see Fig. 1); and a fuse tube assembly comprising a support structure (6b) surrounding at least a portion of the electrical assembly and a reinforcing structure (6a and 6c) formed over the support structure (see Fig. 1); wherein the reinforcing structure comprises a resin composition of discontinuous fibers arbitrarily dispersed in an epoxy (6a, column 6 lines 56-59).

Claim Rejections - 35 USC § 103

15. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

16. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Healey, Jr. (3,979,709) in view of Tobin (PN 4,349,803). Healey teaches the device as applied to claim 1 above. Healey lacks a support structure overlapping the electrical contacts. Tobin teaches a fuse support structure (10) where an inside surface overlaps a portion of an outside surface of each of the electrical contacts (14, see Fig. 1). It would have been obvious to a person of ordinary skill in the art to apply the technique of attaching electrical contacts to a fuse body taught by Tobin to the fuse structure of Healey to obtain a reinforced fuse with integral contacts for greater strength.

17. Claims 12, 13, 26 rejected under 35 U.S.C. 103(a) as being unpatentable over Healey, Jr. (3,979,709) in view of Schmunk et al. (PN 4,028,656). Healey teaches the device as applied to claim 1 and 25 above. Healey lacks a heat shrink structure providing UV protection formed over the reinforcing structure. Schmunk teaches a heat shrink structure (24, column 3 lines 43-47) providing UV protection (column 3 lines 31-32) formed over a fuse tube assembly. It would have been obvious to a person of ordinary skill in the art to combine the heat shrink cover of Schmunk with the reinforced fuse structure of Healey to obtain a fuse better protected from shock and external elements.

18. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Healey, Jr. (3,979,709) in view of Schmunk et al. (PN 4,028,656) as applied to claim 12 above, and in further view of Pearce (PN 5,261,980). Healey as modified by Schmunk above lacks a heat shrink structure comprising of one or more strips of heat shrink tape.

Pearce teaches wrapping a tube of fiber composite with heat shrink tape (column 4 lines 37-38). It would have been obvious to a person of ordinary skill in the art at the time of the invention to use the tape wrapping technique of Pearce with the heat shrink fuse structure of Healey as modified by Schmunk to obtain a heat shrink structure that can be applied to a variety of fuse sizes using a single heat shrink product.

19. Claims 18-21, 30, and 34-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Healey, Jr. (3,979,709). With respect to claims 18-21, 30, 34-36, even though the claims are limited by and defined by the recited process, the determination of patentability of the product is based on the product itself, and does not depend on it's method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process. *In re Thorpe*, 227 USPQ 964, 966 (Fed. Cir. 1985).

20. With respect to claims 18-21 and 30, it would have been obvious to one of ordinary skill in the art to use a vertical application method as an alternate equivalent means of applying the matrix to the fuse of Healey.

21. With respect to claims 34-36, the specific temperature of the assembly for curing and pre-heating would have been obvious one of ordinary skill in the art based upon known ranges of operation for curing the matrix of Healey.


Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Corey M. Broussard whose telephone number is 571 272 2799. The examiner can normally be reached on 7:30-5 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lynn Feild can be reached on 571 272 2092. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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